

DEPARTMENT OF COMMERCE

BUREAU OF STANDARDS
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UNITED STATES GOVERNMENT MASTER SPECIFICATION FOR
BOOTS, RUBBER, SHORT, LIGHT

FEDERAL SPECIFICATIONS BOARD SPECIFICATION No. 493

This specification was officially promulgated by the Federal Specifications Board on June 10, 1927, for the use of the departments and independent establishments of the Government in the purchase of short, light rubber boots.

[The technical requirements of this specification shall become mandatory for all departments and independent establishments of the Government not later than September 10, 1927. They may be put into effect, however, at any earlier date, after promulgation]

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I. GENERAL SPECIFICATIONS

United States Government general specifications for rubber goods, Federal Specifications Board specification No. 59, in effect on date of invitation for bids, shall form a part of this specification in so far as the terms are applicable.

II. GRADE

This specification covers one grade only.

III. MATERIAL AND WORKMANSHIP

See Section V, Detail requirements.

IV. GENERAL REQUIREMENTS

See Section V, Detail requirements.

V. DETAIL REQUIREMENTS

1. **COMPOUND FOR OUTER SOLE.**—The compound shall contain not less than 38 per cent by weight of good quality Hevea rubber. It shall contain litharge or zinc oxide, whiting, carbon black, sulphur, mineral rubber, tar, and accelerators. The outsole shall be black, and shall have a specific gravity not over 1.60.

2. **COMPOUND FOR UPPER STOCKS.**—The compound shall contain not less than 48 per cent by weight of good quality Hevea rubber. It shall contain litharge or zinc oxide, whiting, carbon black, sulphur, tar, and accelerators. The upper stock shall be black, and shall have a specific gravity not over 1.40.

3. **COMPOUND FOR HEELS.**—The compound shall contain not less than 14 per cent by weight of medium quality Hevea rubber and shall be so compounded as to produce a balanced wear with the sole of the boot.

4. **COMPOUNDS FOR FRICTIONS.**—(a) The high-grade friction as called for in this specification shall consist of a rubber compound containing not less than 40 per cent by weight of good quality Hevea rubber. It shall contain litharge or zinc oxide, whiting, carbon black, sulphur, and such oils and accelerators as may be found necessary to insure perfect adhesion.

(b) A medium quality friction may be used as called for in this specification, to be made of a compound containing not less than 20 per cent by weight of medium quality Hevea rubber. It shall contain litharge or zinc oxide, reclaimed rubber, whiting, carbon black, sulphur, tar, and such oils and accelerators as may be found necessary to insure perfect adhesion.

5. **LASTS.**—All boots furnished under this specification shall be made over each manufacturer's regular boot trees.

6. **MEASUREMENTS.**—Measurements shall be based on boot size 9.

(a) *Height.*—The height of boot inside of back shall be not less than 15 inches. The height of boot inside of front shall be not less than 16 inches.

(b) *Girth.*—The circumference at the calf of the boot tree over which the boots are made shall be not less than 16½ inches.

7. **WEIGHT.**—The weight of finished boots shall be not less than 3 pounds 15 ounces per pair, size 9.

8. FINISH.—Boots are to be black throughout, dull finish, and not varnished. No label over $1\frac{1}{2}$ inches in diameter and not more than one on each boot is permissible.

9. GUM VAMP.—The gum vamp shall be made of the upper stock specified above and shall be not less than 0.035 inch thick.

10. GUM COUNTER.—The gum counter shall be made of the upper stock specified above and shall be not less than 0.035 inch thick.

11. GUM ANKLE PIECE.—The gum ankle piece shall be made of a good quality rubber compound and shall be not less than 0.015 inch thick. It shall be placed between the leg form and leg lining.

12. PULL-ONS.—The boots are to be fitted with knob pull-ons.

13. LEG COVER.—The leg cover shall be made of the upper stock specified above and shall be not less than 0.020 inch thick.

14. BINDING.—There shall be a binding at the top of each boot, not less than $\frac{3}{8}$ inch wide, of a good quality gum.

15. OUTER SOLE.—The outer sole shall be a solid sole, gauged not less than 0.190 inch at the toe and not less than 0.130 inch at the heel.

16. HEELS.—The heels shall be made of the rubber compound specified above and shall be not less than $\frac{5}{8}$ inch thick at the thinnest point.

17. LEG FORM.—The leg form shall be made of a cotton fabric weighing not less than 4 ounces per square yard, frictioned on both sides with the high-grade friction compound specified above, and shall be made as known to the trade "cut-to-fit."

18. LEG LINING.—The leg lining shall be made of a cotton net weighing between 11 and 12 ounces per square yard, known to the trade as "zero net." It shall be coated on one side with the above specified high-grade friction compound to insure perfect adhesion.

19. TOE LINING.—The toe lining is to be the same as leg lining.

20. VAMP FORM.—The vamp form shall be made of a cotton fabric weighing not less than 5 ounces per square yard, frictioned on both sides with the above specified high-grade friction compound.

21. COUNTER FORM.—The counter form shall be of the same material as leg form.

22. FRONT AND BACK STAYS.—The front and back stays shall be not less than 0.015 inch thick and may be of gum, or of fabric frictioned on both sides with the high-grade friction compound specified above.

23. LASTING STRIP.—The lasting strip shall be made of a cotton fabric weighing not less than 4 ounces per square yard, frictioned on both sides with the above specified high-grade friction compound. The strip shall be not less than 1 inch wide, so placed that it will come at the edge of the lining and insole.

24. SOLE FORM.—A sole form shall be used consisting of a cotton fabric weighing not less than 5 ounces per square yard, frictioned on

both sides with the high-grade friction compound specified above, or the outer filler not less than 0.060 inch thick shall be so placed that the frictioned fabric side will come against the outer sole.

25. STIFFENING COUNTERS.—Stiffening counters shall be made of a cotton fabric weighing not less than 2.5 ounces per square yard, frictioned with the above specified medium quality friction compound and coated with a high-grade stiffening compound. The total thickness shall be not less than 0.045 inch.

26. INSOLE.—The insole shall be made of a cotton fabric weighing not less than 5 ounces per square yard, coated on one side with a high-grade stiffening compound.

27. STIFFENING SOLES.—Stiffening soles of a high-grade rag shall be used to give necessary stiffness to the bottom of the boot. The total thickness of such parts, including the stiffening compound on the insole, shall be not less than 0.200 inch.

28. VULCANIZATION.—Boots shall be so cured in dry heat under pressure that all parts will be compacted during vulcanization.

29. In order to show in detail the design of the last used, to illustrate the vulcanization and show in general the appearance of the boot, the manufacturer, upon request, shall submit a standard sample, this to be used for any tests thought necessary.

VI. METHOD OF INSPECTION AND TEST

Methods of test shall be as described under United States Government general specifications for rubber goods, Federal Specifications Board specification No. 59, referred to in Section I, in so far as applicable.

VII. PACKING AND MARKING OF SHIPMENTS

Shall be in accordance with best commercial practice unless otherwise specified.

VIII. NOTES

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